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STEM RUST AND BARBERRY NEWS

Issued by

Office of Barberry Eradication

Volume I

July 25, 1930

Number 6

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Bureau of Plant Industry
U. S. Department of Agriculture

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The Office of Barberry Eradication is in the act of moving from the old quarters at 1306 B. Street S. W., to rooms 434, 436, and 438 in the new Administration Building of the Department of Agriculture. The task of moving equipment and getting located in the new quarters has practically meant suspending even routine matters for the past week. It is hoped, however, that the interference has not caused too much inconvenience to the men in the field.

We believe the space allotted to the office, though for a temporary period, will prove much more satisfactory in every way than the scattered offices occupied during the past six months.

Mr. F. C. Meier left Washington for an extended trip through the Western States of the Barberry Eradication Area on July 7. Since that time he has visited field offices in Ohio, Wisconsin, Minnesota, North Dakota, and Montana. On his return trip Mr. Meier expects to spend some time in a number of the other States of the area obtaining first hand information concerning methods of survey, procedure, progress of the eradication work, and the stem rust situation in the hard spring wheat growing States.

Mr. Fletcher is spending the months of July and August in the Western Eradication States visiting field offices and assisting with the epidemiology work during the rust season. Complete and specific information regarding rust spreads from barberry bushes is very much desired and information of this nature that can be obtained and recorded by Barberry Leaders will make valuable additions to the records of the Washington Office.

Miss Benson expresses her appreciation of the prompt attention being given by the Leaders to the preparation of news items for the Stem Rust and Barberry News. Dates for publication have finally been established. The material is now sent forward for approval on the 5th and 20th of each month.

EPIDEMIOLOGY

(Reported by Miss Laura Hamilton)

Extremely hot weather in the spring wheat area for a period of a week or more beginning about July 4, accompanied in some sections by drying winds, has caused considerable crop injury. Mr. Butler reported on July 10 that from Chadron, Nebr. north to Newell, S. Dak. all dry land fields were heat matured from a week to ten days ahead of normal ripening. This was also true from Rapid City west to Chamberlain and southwest to Yankton. Irrigated fields in the Black Hills and an occasional field on well worked lands in the Missouri Valley were also being hastened to maturity. In other sections of South Dakota, and in southern Minnesota heat has caused damage, although probably less in Minnesota where high humidities prevailed during part of the hot period. Rust damage in South Dakota apparently will be restricted to wheat in the extreme southeastern portion along the Missouri River and to occasional fields elsewhere in the eastern section. Spring wheat in extreme southeastern Minnesota probably will be injured in some cases by rust, and elsewhere in the State also there may be some rust damage. In the Red River Valley stem rust is becoming general and may be expected to increase rapidly if conditions continue favorable. In northwestern North Dakota and possibly elsewhere in the State, fields have been injured by heat, while in the northeastern section on the 10th, Mr. Ukkelberg stated that grain was in good condition. Further rust development there and in other sections where grain is not mature depends as usual on weather conditions.

EASTERN REGION

Ohio - 8 East Broad Street, Columbus - Harry Atwood

The survey in Montgomery County has been completed and the squads have moved to Mercer County where they will conduct a systematic intensive survey similar to that just completed in Montgomery County. The different squads will make their headquarters at Ft. Recovery, St. Henry, Coldwater, and Montezuma while surveying the southern half of the county.

Mr. F. C. Meier was in the State on July 12. While here he visited the Maumee area where Messrs. Draper and Hungate are conducting experiments with the use of various chemical sprays to determine their effectiveness in killing barberries.

Plans are under way for the preparation of fair demonstrations in the counties where intensive survey activities are in progress this season. A large demonstration will be prepared for the State Fair in August.

Some of the barberry scouts have placed large, yellow barberry warning posters on threshing machines which are operating in the ter-

ritory being surveyed. These posters are receiving much favorable comment from the people in the rural sections.

This office has recently received requests from several County Extension agents of the State asking for aid in eliminating centers of black stem rust within their counties.

In Champaign County the Agent has organized a program in Harrison Township around the barberry eradication project. A township barberry eradication chairman has been appointed, group meetings have been held and a cooperative program mapped out. At present we have two agents working in this township searching the neighborhood for barberries. The farmers are aiding these men by going with them over their farms and helping to look for barberry bushes.

Indiana - Agricultural Experiment Station, La Fayette - Wayne E. Leer

Since receiving our new filing unit on July 9, considerable time has been devoted to organizing the files according to the uniform system. This work has been completed and we are very enthusiastic about the uniform filing system.

On July 17, Stanley Castell gave the last of a series of four weekly barberry eradication radio talks over Station WFBM Indianapolis, and on July 11 gave the first of a series of four weekly barberry eradication radio talks over station WOWO Ft. Wayne. It is yet too early to determine the value of these talks.

Beginning July 1, demonstrations and lectures have been given at the various 4-H Boys and Girls Club Camps in the State. Camps are held every week from July 1 to August 15. The results of this work last year were very gratifying.

Warning posters are being sent to all millers, grain and feed dealers of the State.

Colored post cards were sent to all rural route box holders in the counties being surveyed about the time the men started work in the counties. The field men are instructed to leave a bulletin at every farm home during the survey. A letter will be sent to all rural route box holders later in the season. In this way, barberry eradication is being called to the attention of the people in the counties being surveyed as often as possible during the season.

During July the Barberry Leader has devoted much time to the collection of rust specimens for Doctor Stakman. Stem rust has been

so scarce in the State this year that it has been necessary to get collections after the grain was harvested in unusual places such as around straw piles, where wheat was lodged, in shady places, and places where the straw remained green for a week or ten days after harvest.

Illinois - Box 72, Post Office Building, Urbana - Robert W. Bills

Mr. Davis, the assistant leader, has made continued use of the lantern slide series and the movies in promoting the campaign in southern Illinois. He delivered illustrated lectures before meetings scheduled in cooperation with the farm bureau of Marion, Franklin, and Jackson Counties. Lectures also were given before high school groups in Sesser and Marion and at the Southern Illinois Teachers' University. Mr. Matheny appeared before a farmers meeting on July 2 at Leamington Church in Gallatin County and showed two reels of pictures to a crowded auditorium.

Mr. Cutright placed a large barberry bush on exhibition in the public square in Marion. The bush was photographed by the local newspaper and the picture appeared in the rotogravure section of the St. Louis Post Dispatch on July 6.

The double return cards addressed to box holders, provided by the Conference for the Prevention of Grain Rust have been used in southern Illinois to precede the survey. Reports indicate they are proving a better means of introducing the campaign than the form letters and bulletins used last year.

Mr. Davis has kept all the local newspapers of the counties being surveyed supplied with news stories carrying items of local interest. Generous use has been made of the cut furnished by the Conference. The identification cut showing a line drawing of the common barberry and the Japanese barberry has been most successful for it shows well on any type of paper.

Union, Gallatin, Alexander, Franklin, Jackson, Saline, Hardin, Pope, Johnson, and Pulaski Counties have been completed and after a few days more work in Massac and Marion Counties, the first survey of the State will be completed.

Three squads have been transferred to Stephenson County. About 3 or 4 weeks will be required to complete the intensive second survey which was begun in 1926. Survey in Lake County will be continued and it is hoped that we can complete the rural section this year.

Michigan - Agricultural College, East Lansing - Francis B. Powers

Although favorable rust weather has existed in Michigan during the past two weeks, there has been very little stem rust developing on grain in northern and central Michigan. The Barberry Leader has made several investigations of grain in various parts of the State while on speaking tours among 4-H Club camps and picnics.

Five hundred and seventy-five boys and girls have been reached by the Barberry Leader and the publicity agent in 6 different locations. Demonstration talks and stereoptican pictures have been given them and bulletin material distributed.

Mr. John Carton has been employed as collaborator giving half of his time to the publicity work of the White Pine Blister Rust Campaign and half to Barberry Eradication. Mr. Carton is writing articles for newspapers and magazines, talking to groups of children and adults, and making arrangements for fair demonstrations.

The Barberry Leader at present is working with the eradication squads who are on first survey in Presque Isle County. Bushes have been found in the towns and in three rural locations. The wild wooded areas are many of them swampy and are being strip scouted around the edge only, except where bushes have been located. When bushes are located, the entire area within the radius of a mile is being thoroughly strip scouted. Although the majority of farmers in this region speak little English, most of them are Polish, their cooperation has been splendid. Their knowledge of the campaign invariably can be traced to children who learned of it in school.

Wisconsin - State Capitol Annex, Madison - Ralph M. Caldwell

A large number of barberry bushes ranging in size from one year old seedlings to large fruiting bushes are being found in all the Wisconsin areas of escaped bushes receiving survey this season. Over 22 $\frac{1}{2}$ tons of salt (one car load) have been required to treat the 12,000 and more bushes and seedlings found to date in the Black Earth region. At Saukville in Ozaukee County more than 2,000 bushes and seedlings have been found in the area of escaped bushes which extends for about 10 miles along the course of the Milwaukee River. One bush has been found here of the dimensions, 12 feet in height by a diameter of about 10 feet at the thickest part.

During July 14 and 15, Mr. F. C. Meier visited the barberry eradication office at Madison and inspected areas of escaped bushes at

near by points. On the first day a trip was made into the area near Jefferson. That barberry bushes grow well in tamarack swamps was well demonstrated at this time. The second day Mr. Meier in company with Messrs. C. L. Hill and W. F. Renk, Commissioners of Agriculture of the Wisconsin State Department of Agriculture and Markets, E. L. Chambers, State Entomologist of the same department, and the Wisconsin Leader inspected the area of escaped bushes at Black Earth, as well as the work of the two squads of local men employed there this season in eradication work.

Grain crops over the State as a whole promise to yield very well this year. In most areas rainfall has been adequate and maturity has been fairly early.

Stem rust has not been an appreciable factor in limiting yields of winter grains or early spring wheat, oats, and barley, although a general infection of wheat and barley was present alarmingly early, as measured by comparable dates of the 1929 epidemic. Infection on oats was much delayed but can now be found universally in extensive areas observed, reaching a maximum severity of 3 per cent on 90 per cent of culms in fields of late oats in the Lake Winnebago region. Slight damage may possibly occur in such fields.

WESTERN REGION

Minnesota - University Farm, St. Paul - Leonard W. Melander

In Minnesota the field activities during July have been along three lines, intensive survey, educational work, and rust observations. Intensive survey has made satisfactory progress in spite of the intense heat. It was surprising that none of the men were overcome by heat because at Northfield on July 11 the temperature registered 110 in the shade. The field men reported that the circular letters sent out just before they went into the field have aided a great deal in making contacts with the farming public. Most of the bushes found since the first of July have been straggling escapes in wood lots where it is not uncommon to find just one small bush partially hidden by other shrubs.

Within the last two weeks, we have received 3 authentic reports of boys finding locations of common barberry. All three will receive medals. One of these locations was at Lamberton, Redwood County, the second at Northfield, Rice County, and the third was at Red Wing, Goodhue County. These reports came in as the result of the publicity given the medal contest for boys and girls.

On July 8 the fourth annual simultaneous stem rust survey in Minnesota was held. For the past four seasons we have taken rust notes on

the grain fields in an area in central Minnesota bounded on the east by St. Paul, on the north by St. Cloud, on the south by St. Peter, and on the west by Lac Qui Parle. This gives us an opportunity to compare the stage of grain, one year with another, on a given date. It is not difficult to find stem rust in the fields this year. The heat of the past week has caused a tremendous amount of damage to the small grains in general. In most instances it has caused premature ripening and in all probability organisms causing root rots also have done some damage. In addition, stem rust has increased at a tremendous rate. It will be difficult this year to differentiate between stem rust damage and heat damage in some parts of Minnesota. In Scott County they were cutting spring wheat on July 16.

Iowa - Morrill Hall, Iowa State College, Ames - D. R. Shophord

Survey for common barberries is being carried on in Kossuth, Emmet, Dickinson, Osceola and Lyon Counties. The squad of men stationed at Ledyard has completed northern Kossuth County and begun third survey work in Lyon County. Third survey will also be started in Sioux County, which borders South Dakota on the west. The work in Osceola County will be completed during the week of July 14.

The Barberry Leader met with two groups of 4-H Club Camp girls, one at Iowa Falls, and the other at Lake Okoboji. About 190 girls were in attendance at these two camps. Assistant leader Cassell met with two Farm Bureau groups during the past week and gave short talks which he supplemented with lantern slides.

A total of 142 bushes and 80 seedlings was found during the past few weeks on 42 properties. Most of these were found on second survey work in Kossuth County.

During the time the Iowa office was without a Leader this spring, a report was sent in to this office of some barberries in Mitchell County. These bushes were destroyed this spring. A medal has been sent to the county superintendent of Mitchell County who will forward it to the little boy who reported the bush. School children are eager to receive medals as they feel that they are of some service.

The weather conditions in Iowa have been ideal for the development of rust during the past two weeks. Reports from field men who are working in northwestern Iowa, revealed that the severity and prevalence have both been increasing very rapidly. The infection in spring wheat ranges from a trace to 50 per cent on from 10 per cent to 100 per cent of the stems; on late oats, as high as a 20 per cent severity on 100 per cent of the stems has been reported from Plymouth County. A few fields of winter wheat in Carroll County also reveal

a heavy infection, ranging from 20 per cent severity on 50 per cent of the stems to 20 per cent on 75 per cent of the stems. The crop, because of the extremely warm weather, has been ripening very rapidly so that a good share of the small grain will be harvested before any severe damage can be done. However, late oats and some spring wheat fields will suffer loss in the northwestern counties.

Plans are now under way for a demonstration that will be held at the Iowa State Fair at Des Moines from August 20 to 29. The demonstration will be placed in the Industrial Arts section along with the Iowa State College exhibits.

District No. 1 - State College Station, Fargo, N. Dak. - G. C. Mayoue

Montana - Survey work is being carried on in the two counties of Yellowstone and Carbon and is progressing satisfactorily. Escaped bushes and seedlings have been found in suspected areas. These counties were settled early in the history of the State and many old fruiting bushes were found on the first survey.

In Carbon County a squad of six men is conducting a farm-to-farm survey. In Yellowstone County high water on the Yellowstone River has temporarily halted survey work along the banks. The original survey of this area located many fruiting bushes, escapes, and seedlings. The survey now being conducted has revealed many more escaped bushes that have grown since the last survey in 1926.

This spring was so unusually hot and dry that all crops had a very poor start. The season also has been unfavorable for rusts.

North Dakota - The fruits of the publicity and educational work which has been conducted during the past few years are being gathered now by the agents who report a wonderful spirit of cooperation and interest on the part of the people throughout the State. The people in the western part of the State were generally skeptical about rust control by barberry eradication. The men working in Burke County report a location of additional escapes and seedlings. The finding of barberry bushes and rust spreads has done much to convince the people in the western part of the State that the common barberry bush is a factor in the spread of black stem rust.

Two agents with a portable demonstration on barberry eradication work are attending the four main fairs being held in North Dakota during July. The demonstration being used this year is based upon the Reynolds rust area in which bushes were removed in 1928 and which showed a definite decrease in rust in 1929.

Drought and extreme heat recently have caused considerable damage to crops, particularly in those regions short of rainfall. These weather conditions have undoubtedly curtailed the development of rust so that the general rust situation is spotted with few areas of heavier infection.

On July 1 an unusual infection of stem rust was found between Devils Lake and Churches Ferry. Upon examination a short time ago severity was estimated at a trace to 5 per cent and prevalence 20 per cent to 75 per cent. This region has the appearance of a local rust epidemic which is now being investigated by Mr. Ukkelberg.

Rye harvest is well started in the southeastern section of the State with wheat, oats, and barley in milk to soft dough. Stem rust severity is estimated at a trace to 3 per cent with prevalence 1 to 100 per cent.

Wyoming - On July 11 agents doing survey work in northeastern Wyoming located the remainder of a large hedge in Crook County. This is the remainder of a hedge estimated to have originally contained more than 100 bushes.

It is of particular interest to note that the only rust which the agents have been able to locate in their travel in this part of the State was found in the immediate vicinity of these bushes. An infection of approximately 3 per cent with a prevalence of 75 per cent was found in the nearest side of a barley field across a road from the bushes. Some distance into the field the infection dropped to a trace of severity. The extremely dry conditions which have prevailed in the region undoubtedly have materially curtailed the spread of rust.

District No. 2 - Box 66, State College Station, Brookings, S. Dak. -
Raymond O. Bulger

Excessive heat and dry weather has brought on harvest somewhat earlier than usual in this District. Heat and drought are causing far greater damage to crops in this District than stem rust. Early oats, barley, and some wheat matured without much loss but late crops were injured some.

In spite of the unusually hot weather the survey for barberries is progressing nicely. Two exceptionally good finds of barberries have been located in Valley and Greenley Counties in Nebraska. Spreads of stem rust were evident from both of these plantings. The spreads are being mapped and details regarding them will be published later. Some very good finds have also been noted in South Dakota. The barberries were heavily infected with rust and would undoubtedly have spread stem rust if weather conditions had been more favorable.

A mid-summer conference for field men in Nebraska is being planned for July 26 at Grand Island. Mr. Fletcher probably will be present for this conference. Mr. Yount, assistant leader in Nebraska, is making all arrangements and has outlined a program in which squad leaders and other field men will take part. The purpose of this conference is to discuss matters of importance that have arisen in the field and to stimulate the morale of the field men. A similar conference for South Dakota field men will be held early in August.

In South Dakota the areas of heaviest stem rust infection are in the extreme southeast part of the State and in an area around Milbank, Grant County. Little or no loss will result in Nebraska except (possibly) to some very late crops.

District No. 3 - Agricultural College, Ft. Collins, Colo. - E. A. Lungren

The work in this District is progressing very nicely. In Wyoming the men have started second survey in Goshen County. Considerable publicity in Torrington newspapers was given to our work and circular letters have been distributed to the farmers. The people in the county are very much interested in our activity and since July 1 the men have found one hybrid barberry in the county. The District Leader was recently in Torrington where he made arrangements with the Superintendent for the county fair for an exhibit this September. He also talked to many business men and the county agent. The North Platte Valley in Wyoming is a large irrigated valley containing an abundant amount of shrubbery. It is possible that more barberries will be found as we progress.

In Nebraska one very large moderately infected barberry was found on a farm four miles west and one mile north of Scotts Bluff. This barberry had spread rust for some three miles and had the weather conditions been more ideal the spread would have been greater. One wheat field about one-half mile from the bush was plastered with rust. The wild grains surrounding the bush were very heavily infected. We believe this barberry contributed a great deal of rust which existed in western Nebraska in 1923 when the weather conditions were more ideal for rust development. We used this splendid rust spread as a demonstration to the farmers in the community. Publicity was given us through Scotts Bluff papers. Our work in the Platte Valley in western Nebraska has been thorough and we expect to finish Scotts Bluff County before the end of this month and will then move to Morrill County.

In Colorado second survey is still progressing in El Paso County. We are finding barberries practically every day. There are many escaped bushes growing along creeks which evidently came from planted barberries in the city of Colorado Springs.

In general conditions over the District for the past month have been extremely hot and dry. The winter wheat has escaped the rust. There is not sufficient rust to do any damage. Our spring grains in the District are in the milk stage and stem rust is just commencing to appear in these grains in the irrigated sections of Colorado and Wyoming. If our present weather conditions continue there will be little rust damage in the spring wheat.

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Mr. Meier asks - Where are the barberries in western North Dakota and eastern Montana?

Mr. Calhoun wants to know if you have room for another memo?

Mr. Clark says - Don't forget L. A. numbers and dates.

Mrs. Hoffman wants to know the what, why, when, and where, on every 1034.

Mr. Popham says - - - - - its plenty warm.

